6 FLEX

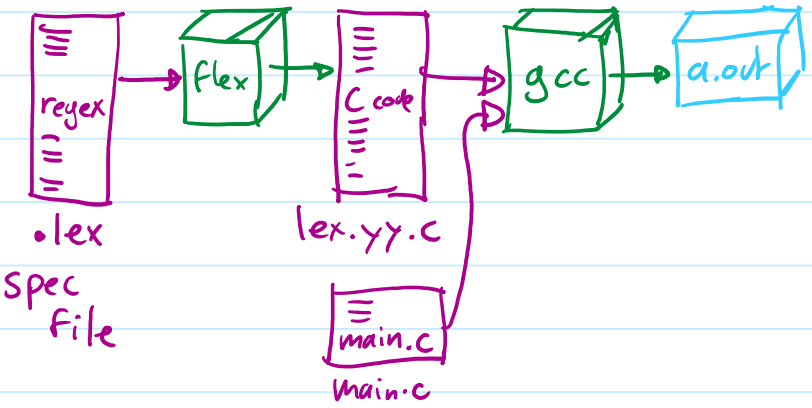
Monday, February 17, 2025 12:17 PM

RegEx ⇌ Automata → Code.

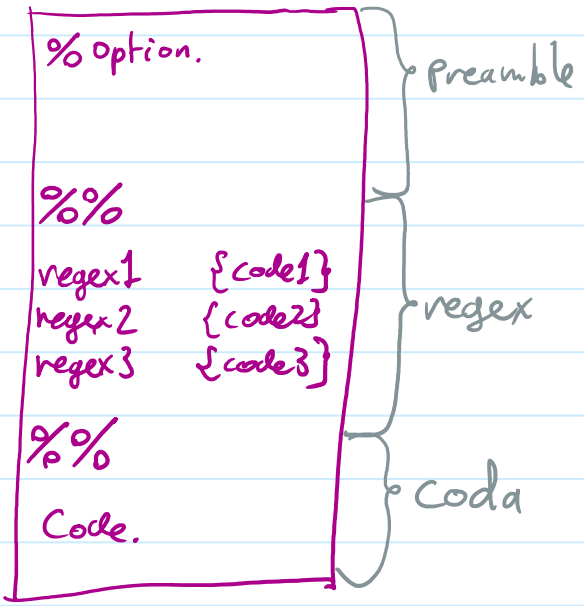
FLEX :- A lexical Analyser Generator

'60 Lex by Eric Schmidt for AT&T, UNIX
'70 flex Mike Lesk & Vern Paxson for B.S.D.

- uses POSIX standard
- Flex is a "generator"



- THE FLEX SPECIFICATION FILE



- flex directives
- flex options/config
- regex definitions.
- code %{ %}

- regex + code

code that will be copy pasted into output file.

- THE CODE GENERATED BY FLEX
  - variables:
    - yytext :- ntca. null terminated character Array the last string matched.
    - yyleng :- the lenght of yytext
    - yylval :- a value attached to yytext
    - yyin :- the input file.
  - functions
    - yylex() :- the lexical analyzer implements all the automata.
    - yywrap() :- called when input is exhausted
    - yyinput() :- reads one character from input.

- FLEX WORKFLOW

```
$ flex spec_file.l          → lex.yy.c
$ gcc -lfl lex.yy.c *.c     → a.out
$ ./a.out
```

- FLEX TIE BRAKERS

Suppose:

Flex

1 • [0-9]+
2 • [0-9]+ "." [0-9]+

Input

1
123.27abc
2

- flex prefers longest string (2)

Suppose:

Input

Suppose:

1. (Ala)pple(s?)
2. [a-zA-Z]+

Input

1

Apple53

2

- flex prefers the first one in the file.

Suppose:

1. [a-zA-Z]+
2. (Ala)pple(s?)

- flex issues a warning!!

—o— EOF